

1996 Pollution Prevention Annual Report

December 1, 1996



Submitted to:

The Honorable George Allen, Governor

The Honorable Madison E. Marye, Chair
Senate Agriculture, Conservation and Natural Resources Committee

The Honorable A. Victor Thomas, Chair
House Conservation and Natural Resources Committee

By:

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I Introduction

A. Report Background

The Virginia General Assembly adopted pollution prevention legislation during the 1993 session. One of the primary features of the legislation is that it established, for the first time, a state policy to promote **source reduction** as a key environmental management option, followed in order of preference by reuse, recycling, treatment and finally disposal. This policy preference is similar to that adopted by the United States Congress with the Pollution Prevention Act of 1990.

The law also required the Department of Environmental Quality (DEQ) to establish a pollution prevention technical assistance program. The Office of Pollution Prevention (OPP), a non-regulatory, voluntary pollution prevention technical assistance program, was an existing program within the Department's Division of Policy and Research in 1993, having been originally initiated as the Waste Minimization Program in 1989 by the Department of Waste Management. Therefore, the 1993 legislation formalized the existing program. In May of 1996, the program became part of the newly developed Office of Compliance Assistance and Pollution Prevention within the Division of Intergovernmental Affairs.

In 1994, the General Assembly amended the law to authorize specific types of assistance activities that the pollution prevention program should pursue, including establishing a pollution prevention clearinghouse of information, providing technical assistance to Virginia businesses and other organizations, and researching and recommending incentive programs for innovative pollution prevention programs.

The original law includes a requirement for the Department to "submit an annual report to the Governor and the appropriate committees of the General Assembly" each December 1, beginning in 1994 (§10.1-1425.17, *Code of Virginia*). This annual report summarizes the pollution prevention activities of the Department for the period from November 1, 1995 through October 31, 1996.

B. Current Resources

The current staff of the Office of Pollution Prevention consists of the program director and three full-time employees (manager, senior environmental engineer and environmental program analyst). In addition, through the Department's student intern program, OPP has had the support of an additional part-time employee for approximately half of the year. For state fiscal year 1997, just over \$80,000 in general funds has been budgeted for pollution prevention activities. In addition to this amount, the Department receives funding through several federal grant programs, totaling approximately \$220,000 for the state fiscal year.

II Pollution Prevention Outreach Activities

As required by law, the Office of Pollution Prevention has as its mission to "assist all persons in promoting pollution prevention measures in the Commonwealth" (§10.1-1425.12, *Code of Virginia*). To accomplish this broad task, OPP staff use a variety of outreach approaches, tailoring them to the particular target audience of the event, initiative or item. In general, the outreach activities of OPP fall into three general categories: training, presentations and information products.

A. Training

During 1996, pollution prevention training was presented to a number of audiences via videoconferences and training workshops.

Videoconferences. OPP regularly subscribes to national pollution prevention videoconferences presented by the U.S. Environmental Protection Agency, the National Institute of Standards and Technology and various universities. The videoconferences allow Virginians to hear directly from national pollution prevention experts without having to travel a great distance or pay a conference fee, which are often substantial. Admission to all videoconference broadcasts presented by OPP is free, and videotapes are made available after the broadcast by request. Generally, staff mail brochures announcing the videoconference directly to the target audience; notices are also included in the program newsletter.

From November, 1995 through October, 1996, three video conferences were sponsored by OPP:

- ◆ **“Environmental Cost Accounting”**, broadcast by the National Technological University, EPA and the National Institute for Standards and Technology on December 13 to an audience of 10 in Richmond.
- ◆ **“Green and Profitable Printing”**, broadcast by the University of Wisconsin - Extension and EPA on May 17 to an audience of 35 at 3 sites (Richmond, Roanoke and Norfolk).
- ◆ **“Reducing Waste and Prevention Pollution for Boatyards and Marinas”**, broadcast by the University of Wisconsin - Extension on October 8 to an audience of 45 at 3 sites (Gloucester Point, Richmond and Norfolk). Co-sponsored by the Virginia Department of Conservation and Recreation, the Virginia Institute of Marine Science, DEQ’s Chesapeake Bay Program, the Virginia Coastal Program, Hampton Roads Sanitation District, the Elizabeth River Project and the Virginia Association of Marine Industries.

Workshops/Conferences. In 1996, the Department once again co-sponsored the annual *Environment Virginia* conference held at the Virginia Military Institute. In addition, the Office of Pollution Prevention presented two series of workshops, one for manufacturers and one for Department enforcement and compliance staff.

- ◆ **1996 Environment Virginia Conference:** Each year, OPP staff work closely with conference planners at the Virginia Military Institute Research Laboratories to present the *Environment Virginia* conference. At the April, 1996 conference, which focused on non-point source pollution prevention and attracted over 400 participants, Governor Allen and Secretary of Natural Resources Becky Norton Dunlop were both keynote speakers. Representatives from all DEQ media programs, regional offices and special programs also attended the conference.
- ◆ **“Forum on Environmental Compliance Assistance & Practical Pollution Prevention Ideas”:** In September, OPP co-sponsored six pollution prevention/ regulatory update workshops for small to medium sized manufacturers with local planning district commissions (PDCs). OPP provided grant funding to the PDCs (one in each of the six DEQ regions) to plan and host the events. Forums were presented in Chesapeake, Roanoke, Annandale, Marion, Staunton and Richmond.

Approximately 200 representatives of industry attended the workshops, which included presentations by OPP staff and DEQ regulatory staff from the air, water and waste divisions.

- ◆ **“Pollution Prevention for Enforcement and Compliance Officers”:** In September, in cooperation with DEQ’s Office of Enforcement, OPP presented a workshop for DEQ staff on incorporating pollution prevention into enforcement and compliance activities. Approximately 75 people attended sessions of the one-day workshop, which was presented in Manassas, Roanoke, Virginia Beach and Richmond.

In addition to the two training series, OPP staff also presented a half-day workshop on June 13 for state agencies affected by the House Joint Resolution No. 453 (adopted by the 1995 General Assembly), which requests certain state agencies to develop pollution preventions. See Section IV.B. for more information on this initiative.

B. Presentations

From November, 1995 through October, 1996, OPP staff made more than 15 pollution prevention presentations to a variety of audiences at locations around the Commonwealth. Audiences included small manufacturers, local government agencies, students, regulatory board members, state government agencies and small businesses. Topics of the presentations range from a general overview of the concept of pollution prevention to specific pollution prevention techniques for particular industrial sectors.

Examples of occasions at which OPP staff has made presentations include:

- ◆ **“Pollution Prevention for Metal Cutting Operations”**, sponsored by the Southwestern Virginia Advanced Manufacturing Technology Center, Pulaski, December 6, 18 participants.
- ◆ **“Small Business Pollution Prevention Technical Assistance Pilot Workshop”**, U.S. Environmental Protection Agency, Baltimore, January 30, 25 participants.
- ◆ **“Local Pollution Prevention Success Stories”**, Richmond Chamber of Commerce Manufacturing Group Meeting, Richmond, February 12, 30 participants.

- ◆ “Pollution Prevention in Auto Shops”, Virginia Autobody Association Meeting, Richmond, May 15, 35 participants.
- ◆ “The Psychology of Pollution Prevention”, U.S. Environmental Protection Agency Region III’s Waste Minimization Conference, Philadelphia, June 4, 80 participants.
- ◆ “Pollution Prevention in Maintenance Shops”, Richmond Airport Commission Meeting, Richmond, June 20, 35 participants.
- ◆ “Accessing Pollution Prevention Information Resources”, Elizabeth River Project Annual Conference, June 21, Norfolk, 40 participants.
- ◆ “How to Start a Pollution Prevention Program” and “How to Conduct an On-Site Pollution Prevention Assessment”, Alexandria Waste Authority, June 26, 20 participants.
- ◆ “Practical Cost Reduction and Environmental Compliance Approaches: A Pollution Prevention Workshop”, sponsored by the A.L. Philpott Manufacturing Center, Danville, June 27, 15 participants.
- ◆ “DEQ’s Pollution Prevention Internet Project”, Joint Meeting of Representatives of the Air Pollution Control, Water Pollution Control and Waste Management Board, Richmond, June 13, 25 participants.
- ◆ “DEQ’s Pollution Prevention Internet Project”, Meeting of the Air Pollution Control, Richmond, August 13, 25 participants.
- ◆ “Pollution Prevention Techniques”, Newport News Recycling Program Pollution Prevention Workshop, Newport News, August 21, 15 participants.
- ◆ “DEQ’s Pollution Prevention Internet Project”, Environmental Engineering Class, Virginia Military Institute, Lexington, September 4, 20 participants.
- ◆ “Pollution Prevention Case Studies in Virginia”, Appalachian Regional Recycling Consortium Industrial Waste Reduction Workshop, Farmville, September 18, 14 participants.

- ◆ “Making the Connection with Local Governments”, Chesapeake Bay Program Conference, Harrisburg, Pennsylvania, October 11, 25 participants.
- ◆ “DEQ’s Pollution Prevention Internet Project”, Meeting of the Water Pollution Control Board, Richmond, September 12, 25 participants.
- ◆ “State Agency Pollution Prevention Initiative”, Meeting of the facility managers of the Department of Mental Health, Mental Retardation and Substance Abuse, Staunton, September 19, 60 participants.

OPP has also displayed its tabletop exhibit at a number of conferences, including the following:

- ◆ EPA Region III Waste Minimization/Pollution Prevention Technical Conference, June 4-5, Philadelphia, 400 participants.
- ◆ Toxic Release Inventory Workshops, Richmond (July 8) and Roanoke (July 9), 120 participants.
- ◆ Lead Prevention Workshop for Local Governments, Richmond, July 26, 100 participants.

C. Newsletter

OPP produces a quarterly newsletter with stories that feature OPP activities and pollution prevention news of general interest; two extended-length issues (8 and 12 pages) were distributed in 1996. The publication, entitled “Pollution Prevention Virginia,” highlights the successes of pollution prevention programs and products through its regular “Pollution Prevention Frontiers,” “Program Spotlight,” and “Product Spotlight” columns. In addition, the newsletter has added two new features to each issue: an “Internet Spotlight,” which details the latest in Internet electronic pollution prevention resources, and “Conference Calendar.” The publication currently is sent to over 7,000 companies, government officials, associations, environmental groups, media contacts, and individuals within Virginia, the United States, and internationally.

The Winter 1996 issue focused on the Virginia Industrial Roundtable’s efforts in helping to develop the Chesapeake Bay Pollution Prevention Program, a part of the Chesapeake Bay Toxics Reduction and Prevention Strategy; pollution prevention in the aluminum cold rolling process at

Reynolds Metals' Richmond Foil Plant; Simple Green, a non-toxic alternative for hazardous chemical and solvent cleaners; the National Technology Transfer Center's electronic environmental resources; Custom Print, a pollution prevention pioneer in the printing industry; and, the U.S. Environmental Protection Agency's WasteWi\$e program to reduce municipal solid waste.

The Fall 1996 issue of "Pollution Prevention Virginia," featured articles included a letter from Governor George Allen on "Common-Sense Environmentalism"; the Governor's Environmental Excellence Awards for Manufacturers; ISO 14000 and pollution prevention; pollution prevention activities at Crown Cork and Seal Company, Inc. and Tenneco's Newport News Shipbuilding; ZYMO®, the Parts Washer, which uses bioremediation technology to clean grease and oil from automotive and machinery parts; home and garden pollution prevention resources; the DEQ Internet home page; and Virginia Tech's implementation of energy-conservation techniques in the U.S. Department of Energy's "FutureCar" engineering design competition.

D. Small Business Pollution Prevention Internet Project

In the fall of 1995, DEQ was awarded a three-year grant by EPA to conduct a demonstration project that tests the efficiency and utility of providing pollution prevention and compliance assistance to small businesses via an on-line computer information transfer system. The grant project builds on DEQ's agency-wide Internet project, which was started in early 1995. The basis of this system is a World Wide Web server that is accessible to any users of the Internet worldwide. DEQ's home page provides users with a general overview of the system and leads them to more detailed sources of information via a series of additional home pages for specific agency programs and links to other environmental on-line resources.

Specific tasks of the small business Internet project include revisions to the current pollution prevention/compliance assistance home pages (including the development of an interactive capability), an effectiveness survey of users, development of electronic links to other relevant on-line environmental resources, development of new information materials, development and delivery of training on the system, and development of a marketing strategy.

The resources of the Internet have already been integrated into OPP's customer service. For instance, OPP is an active participant of at least five listserves related to pollution prevention. A listserv enables users with common interests to post questions via electronic mail. All questions and all answers are sent to every subscriber so that every listserv member has the benefit of reading all correspondence. OPP has also identified a number of very useful electronic bulletin boards and home pages related to pollution prevention, such as solvent substitution databases. Search capabilities also allow OPP staff to investigate vendors for specific customer needs.

III. Pollution Prevention Technical Assistance

In addition to the various informational materials produced by OPP, the Office also provides facility-based technical assistance services, primarily in the form of pollution prevention opportunity assessments and responses to information requests from program customers.

A. Pollution Prevention Opportunity Assessments

The pollution prevention opportunity assessments provided by OPP offer information and advice to Virginia companies that lack pollution prevention expertise. The goals of such an evaluation are to discover ways to reduce a facility's impact on the environment while concurrently reducing costs and improving the work environment.

When requested, OPP provides customized on-site technical and research assistance. This service involves evaluating and interpreting the information that manufacturers need to reduce waste, wastewater discharges, and air emissions, including the identification of alternative technical solutions. For example, on-site technical assistance visits at six manufacturers with electroplating processes investigated the possibility of implementing source reduction and closed-loop recycling techniques to reduce hazardous waste generation while preventing any transfer of toxic constituents across environmental media. Innovative technologies such as electrocoagulation, reverse osmosis and ion-exchange not only eliminate the generation of hazardous waste sludge containing toxic metals, but also offer the possibility of enabling a facility to achieve zero discharge of their effluent by totally recycling their aqueous process streams.

Approximately 35 companies were visited by OPP technical staff during 1996. The time spent conducting each assessment ranged from a half-day to more than five days, with shorter visits usually focusing on one particular problem. During a comprehensive audit, the majority of the time in the plant is spent collecting the information and data needed to make pragmatic pollution prevention suggestions to facility management.

B. Responses to Research Inquiries

From November, 1995 through the end of October, 1996, OPP received 514 requests for information, or approximately 2 per day (based on a 250-day work year). Requests in the forms of telephone, written and e-mailed inquiries fall into three general categories: requests for one or more informational products produced by OPP; questions related to pollution prevention in industry-specific settings that may require significant research, including contacting additional sources for information or searching electronic databases or the Internet; and, requests for various EPA pollution prevention publications. The Office maintains a database of all requests received. Response time for research requests averages five business days, while requests for materials only are generally sent within one business day.

Type of Organization	Number of Requests	Percent of Total
Government	211	41
Business/Industry	208	40
Educational Institutions	43	8
Other	30	6
Community/Non-Profit	22	4

As is summarized here, approximately four-fifths of requests have come from business/industry and local, state and federal government agency officials, including DEQ regulatory staff. Community and other non-profit organizations and educational institutions such as universities and high schools, account for approximately ten percent of all requests. These figures correlate with OPP's marketing efforts: most materials and outreach efforts are targeted at industry and government because of their relative rates of waste generation.

Using the Department's six regions, a geographic analysis of requests indicated that inquiries were received from all areas of Virginia. In 1996, the highest percentages of requests were received from the Richmond, Roanoke and Northern Virginia regions, all areas with significant numbers of government and industry facilities. The remaining 166 requests were from outside of Virginia; 15 of these were from international sources.

DEQ Region	Number of Requests	Percent of Total
1 - Southwest	12	4
2 - Roanoke	66	19
3 - Shenandoah Valley	26	8
4 - Northern Virginia	78	22
5 - Piedmont	109	31
6 - Tidewater	57	16

IV. Pollution Prevention Initiatives

A. Chesapeake Bay Pollution Prevention Program

In January, 1989, the Chesapeake Bay Executive Council adopted the Chesapeake Bay Basinwide Toxics Reduction Strategy as part of its commitment to the Bay in the 1987 Chesapeake Bay Agreement, the guiding document of the Chesapeake Bay restoration effort. The Executive Council, which consists of the Governors of Virginia, Maryland and Pennsylvania; the Mayor of the District of Columbia; the EPA Administrator; and the Chairman of the Chesapeake Bay Commission, reevaluated the strategy starting in 1992 to better define the nature, extent and degree of toxic pollution. The result was the Chesapeake Bay Basinwide Toxics Reduction and Prevention Strategy, a series of implementation plans, policies and strategies that address the environmental and resource management issues involving the Bay.

In the strategy, pollution prevention is embraced as one of the main components for improving conditions in the Bay. Specifically, the Executive Council has made it a primary objective to promote pollution prevention technical assistance and educational programs at the federal,

state and local government levels throughout the watershed. The signatories recognized that pollution is generated by a wide range of sources, including federal facilities, local and state governments, industrial facilities and households. As a result, the Executive Council has committed to a variety of ambitious programs and targets to enhance the Bay, including reductions in toxic releases from industry and federal facilities.

OPP has worked closely with DEQ's Chesapeake Bay Program staff, staff from EPA's Chesapeake Bay Program Office and representatives from other states and industry over the past two years to craft a voluntary pollution prevention program that will encourage industry to adopt pollution prevention principles. The program, called *Businesses for the Bay*, was approved by the Executive Council at their annual meeting in October, 1996. A copy of the program brochure, which is expected to be sent directly to over 2,000 facilities within Virginia in late 1996, is included as Appendix A.

Businesses for the Bay, which is open to all businesses in the watershed, is a voluntary program that recognizes businesses for their efforts to prevent pollution in the Bay. Each participating facility will develop their own annual pollution prevention goals, which may range from reducing the volume of chemicals used at the facility to acting as a mentor and providing technical assistance to other businesses. Benefits of participation include cost savings from reduced waste management, positive publicity, increased patronage, and eligibility for the Chesapeake Executive Council's *Businesses for the Bay Excellence Awards*.

Goals of the program include raising participation in pollution prevention activities to include 75% of all businesses in the Chesapeake Bay watershed by the year 2000; achieving an aggregate reduction in the amount of chemical releases across the Chesapeake Bay watershed for Toxic Release Inventory chemicals by 65% and Chesapeake Bay Toxics of Concern by 75% by the year 2000 (using 1988 as the baseline year); increasing the number of small businesses participating in pollution prevention; and, increasing the number of pollution prevention mentors from the private sector. OPP will actively promote participation in the program over the next year through newsletter features, presentations and other means.

B. Virginia State Agency Pollution Prevention Planning Initiative

House Joint Resolution 453, which requests certain agencies of the Commonwealth to engage in pollution prevention planning, was adopted by the 1995 General Assembly. In adopting the resolution, the legislature recognized that there “are significant opportunities for state agencies to reduce or prevent pollution at the source through cost-effective operation and raw material use.” In addition, the resolution noted that several agencies, including the Department of Motor Vehicles, Virginia Correctional Enterprises and the Department of Transportation, had already realized significant cost savings and other benefits from their pollution prevention efforts.

As the Commonwealth’s lead agency for pollution prevention efforts, DEQ is requested by the resolution to complete three specific tasks related to providing direction and guidance to other state agencies:

- (1) By January 1, 1996, establish criteria for use by state agencies to determine whether minimal amounts of toxic or hazardous substances are generated as wastes or released into the environment as pollutants.
- (2) By January 1, 1996, develop criteria to be used by agencies in creating pollution prevention plans.
- (3) Establish schedule for filing of agency pollution prevention plans.

In response, in late 1995 DEQ established the following protocol:

- ◆ DEQ will use current regulatory status as the criteria for determining whether a particular state agency is subject to the resolution. In other words, any Virginia state agency that is currently subject to an environmental reporting requirement or required to obtain an environmental permit from DEQ is subject to the planning request of HJR 453.
- ◆ DEQ will use standard pollution prevention planning guidance developed by EPA as the basis for its planing initiative.
- ◆ DEQ will provide technical assistance to affected state agencies as requests, including training workshops, on-site assessments and research.

- ◆ A three-year implementation schedule will be used (year one: training; year two: plan development; and year three: plan implementation). Under this framework, the agency pollution prevention plans are expected to be submitted to DEQ by July 1, 1997.

Based on the criteria noted above, 25 state agencies were identified as being subject to the resolution (a list is included as Appendix B). The directors of these agencies were notified in the spring of 1996 and requested to name a point of contact for the planning process. On June 13, a workshop was held for the state agency contacts. At the workshop, participants agreed to begin the process of identifying opportunities for pollution prevention within their agencies and to meet again in November. On November 6, 1996, state agency pollution prevention contacts met again to discuss their progress in developing the plans. Various issues including performing a pollution prevention opportunity assessment, procurement of less toxic materials and implementing the plans once developed were discussed. Participants also agreed to work cooperatively with other agencies on issues related to developing localized waste exchanges and finding alternatives for common waste streams. OPP staff will continue to provide information and other types of assistance to the agency contacts.

V. Integration of Pollution Prevention Into DEQ Regulatory Programs

OPP continued its efforts to integrate pollution prevention concepts into the Department's regulatory programs during 1996. The primary regulatory integration activity of the past year was a series of joint hazardous waste inspections and pollution prevention visits conducted in each of the Department's six regions.

In 1995, DEQ compliance inspectors received introductory training on pollution prevention techniques; many contact OPP staff regarding facilities they have visited where opportunities for implementing pollution prevention exist. Pollution prevention field training for DEQ's inspectors continued in 1996 through joint facility visits with OPP staff. The companies inspected seemed to welcome having a pollution prevention specialist review their processes. They also expressed support for DEQ's and EPA's policy of incorporating pollution prevention into all aspects of environmental regulatory functions.

Feedback from the inspectors was that the pollution prevention assessment process was very helpful in understanding the sources of wastes and emissions and possible waste reduction alternatives. Normal compliance inspections do not follow a facility's process from start to finish. Most inspections focus on "end-of -the pipe" environmental control equipment and the related waste management practices to assure compliance with the regulations.

OPP has discussed with DEQ's regulatory staff possible modifications in compliance inspection procedures that would foster a greater emphasis during the inspection on recognizing and suggesting pollution prevention opportunities as one method for attaining regulatory compliance. EPA has published sector notebooks for eighteen industrial processes which provide valuable information to help inspectors understand a manufacturing process and to recognize pollution prevention possibilities. OPP has distributed sets of the sector notebooks to each regional office.

In addition to the joint facility visits, OPP pursued several other regulatory integration activities in 1996. For example, in September, OPP developed and conducted one-day workshops for Virginia businesses which promoted strategies for achieving regulatory compliance through pollution prevention techniques. Staff from each of DEQ's primary regulatory programs (air, water and waste) made presentations. The workshops were presented in each of the six regions for local manufacturing facilities, and with the cooperation and assistance of the local Planning District Commissions to promote these events, overall attendance exceeded 200.

As noted above in Section II.A., OPP co-sponsored four workshops for Department compliance and enforcement staff on incorporating pollution prevention within their activities with the Office of Enforcement in the fall of 1996. OPP also continues to foster its network of contacts in the Department's regional offices. A meeting of all the contacts was held in June in Richmond. Regulatory staff are encouraged to refer customers to OPP for assistance and/or contact OPP staff directly. In 1996, OPP received almost one hundred requests for information from DEQ staff.

VI. Pollution Prevention Partnerships

In 1996, OPP continued to pursue partnerships and cooperative relationships with other organizations that work to promote pollution

prevention within the Commonwealth. Cooperative efforts are essential in order to begin to meet the goal established for the Department by the General Assembly, to “establish a voluntary pollution prevention assistance program designed to assist all persons in promoting pollution prevention measures in the Commonwealth.” OPP has developed constructive relationships with other state agencies, state universities, non-profit organizations and economic development agencies.

A. State Pollution Prevention Roundtable Organizations

OPP is an active participant in two state pollution prevention roundtables: the EPA Region III Pollution Prevention Roundtable and the National Pollution Prevention Roundtable. Meetings of the EPA Region III Pollution Prevention Roundtable during 1996 were held in March (Philadelphia) and September (Carlisle, Pennsylvania). The regional roundtable provides the pollution prevention staff of the five states within Region III and the District of Columbia an opportunity to exchange information among themselves and with EPA regional and headquarters staff.

Several DEQ staff were able to attend the annual National Pollution Prevention Roundtable meeting, attended by over 500 people, held in Washington, D.C. in April. The conference, which is held in different locations each year, features presentations and discussions by national and international pollution prevention leaders from government, industry and non-governmental organizations. At the April conference, DEQ Deputy Director March Bell discussed Virginia’s pollution prevention program during one of the opening plenary panel sessions.

B. Technical Assistance Organizations

OPP continues to work closely with other organizations within Virginia that provide technical assistance to business and industry, including Virginia’s Center for Innovative Technology (CIT), the A.L. Philpott Manufacturing Center (PMC) and the Elizabeth River Project. Each of these organizations represent a different type of technical assistance service provider: CIT focuses on bringing manufacturers and users of environmental technologies together; PMC is a full-service manufacturing extension program which expanded its services to include environmental assistance in 1995; and, the Elizabeth River Project is a grassroots

organization representing a variety of interests focused on restoring environmental quality in the Elizabeth River.

CIT and the A.L. Philpott Manufacturing Center. During 1996, OPP staff worked closely with staff of both CIT and PMC on joint pollution prevention efforts such as a challenge grant program in which \$45,000 was awarded to six companies, industry workshops and tradeshow, and assistance to specific facilities. All of these initiatives were very successful, most likely due in part to the combined resources of the partner organizations.

In late 1996, DEQ, CIT and PMC embarked on a new project to develop a strategic plan for the network of environmental service providers within Virginia (including both private and public sector). The network will provide industry in the Commonwealth with ready access to high-quality and cost-effective environmental services. Federal funding will support the one-year project. A series of meetings with environmental service providers, including universities, consultants, economic development agencies and state agencies, is planned. The primary objective of the project, which will be co-managed by DEQ and PMC, is to lay the groundwork for establishing a highly efficient, collaborative, statewide network of environmental resources for industry that:

- ◆ Avoids duplication;
- ◆ Strives to fill important service gaps;
- ◆ Is committed to continuous improvement and evaluation; and,
- ◆ Is strengthened by appropriate policies, procedures, partnership agreements and information infrastructure.

Elizabeth River Project The Elizabeth River Project (ERP), has been working since 1992 on a variety of projects aimed at restoring environmental quality in the Elizabeth River watershed. OPP co-sponsored several industry events with ERP during the past year, including teleconferences and industry workshops.

In early 1996, the creation of a pollution prevention resource service was identified by the Watershed Action Team as one of the five most critical actions in the watershed plan. In the fall of 1996, ERP received a grant from DEQ to develop the service, which will include outreach to land users in the form of mass mailings, presentations to trade organizations and civic groups, media campaigns and other outreach efforts. The service will also target the auto servicing industry with more intensive outreach, including

on-site assistance. Staff from OPP will work closely with ERP staff to develop outreach materials and assistance strategies.

C. Economic Development Agencies

In 1996, OPP expanded its partnerships with economic development agencies at both the state and local government level. The partnership begun in 1995 with the Virginia Small Business Development Centers Network (which consists of the 22 small business development centers [SBDCs] around the Commonwealth) continued during the past year. OPP staff worked on several joint projects with the two pollution prevention specialists hired under the grant received by the Network in 1995 from the U.S. Small Business Administration. The joint projects included on-site facility assistance and industry workshops. In addition, several SBDCs co-sponsored teleconferences with OPP, providing meeting space and local publicity.

OPP also established ties to the state's regional planning district commissions (PDCs) for the first time during 1996. The PDCs, which receive funding from member local governments, are able to attract a high level of private sector participation because they are not perceived to be threatening in any way, which may not always be the case with a regulatory agency such as DEQ. In September, OPP co-sponsored a series of six industry compliance assistance/pollution prevention update forums, one in each of the Department's regions. OPP provided grant funding to the six co-sponsoring PDCs to oversee the organization of and publicity for the workshops. The workshops series was very successful, and OPP staff plan to continue to work jointly with the PDCs in the future.

D. Virginia Pollution Prevention Advisory Committee

In 1994, the Department, as authorized by law, created the Virginia Pollution Prevention Advisory Committee, a 24-member panel that consists of representatives from industry, education, environmental and public interest groups, as well as local, state and federal government agencies. A membership list is included as Appendix C. The advisory committee meets on an as-needed basis.

A joint meeting of the Pollution Prevention Advisory Committee and representatives of the Department's three regulatory boards (the Air Pollution Control Board, the Water Pollution Control Board and the Waste

Management Board) was held on June 13, 1996. The purpose of the joint meeting was to update the boards on the Department's nonregulatory pollution prevention efforts and to promote discussion between board members and advisory committee members on issues related to the integration of pollution prevention into the Department's regulatory programs.

Presentations were made on the state agency pollution prevention planning initiative, the Chesapeake Bay Pollution Prevention Program, Merck & Company's Project XL and the ISO 14000 environmental management system. In addition, Department staff demonstrated the agency's Internet capabilities (emphasizing available on-line pollution prevention resources) and discussed plans for future expansion of the system. Each of the board representatives requested that a similar demonstration be presented to the full boards. To date, staff have made similar Internet presentations to the full Air Pollution Control and the Water Pollution Control Boards.

VII. Conclusion

Over the past year, DEQ has continued its central role in promoting voluntary pollution prevention throughout the Commonwealth. Program staff have been involved in pollution prevention activities, including on-site visits, workshops and joint initiatives, in all regions of Virginia. OPP has continued to promote pollution prevention through its research and informational resources. In addition, OPP has worked to maintain and expand its cooperative relationships and partnerships with other organizations that are actively promoting pollution prevention within the state.

Over the next year, the Department will investigate two new areas of pollution prevention outreach: a small grants program and the use of an electronic waste exchange. The challenge grant program will be open to small businesses and local governments located within the Chesapeake Bay watershed. Current plans are for approximately 15 grants of up to \$2,500 each to support pollution prevention projects.

In addition to the challenge grants program, OPP is planning to investigate the feasibility of adding a waste exchange forum to its Internet-based service. A waste exchange lists materials that are available for no or little cost because they are no longer needed or off-specification. The company

listing the material saves the disposal cost and the company acquiring the material saves on procurement costs. As currently envisioned, OPP would simply provide the forum for participants to list and review available surplus goods; interested parties would contact each other directly. OPP will also investigate whether the waste exchange should be organized on a regional basis to overcome any barriers related to transportation costs.

**Appendix A: Chesapeake Bay Program *Businesses for the Bay*
Program Brochure**

[insert brochure]

Appendix B: State Agencies Affected by HJR 453

Christopher Newport University
College of William and Mary
Department of Conservation and Recreation
Department of Corrections
Department of Emergency Services
Department of Juvenile Justice
Department of Mental Health, Mental Retardation and Substance Abuse
Department of Military Affairs
Department of Motor Vehicles
Department of Transportation
George Mason University
James Madison University
Longwood College
Mary Washington College
Norfolk State University
Old Dominion University
Radford University
University of Virginia
Virginia Military Institute
Virginia Museum of Fine Arts
Virginia Commonwealth University
Virginia Community College System
Virginia State Police
Virginia State University
Virginia Tech

Appendix C: Virginia Pollution Prevention Advisory Committee

Sharon Quilen Adams, Elizabeth River Project Board Member
Guy Aydllett, Chief, Industrial Waste Division, HRSD
Tim Blevins, Pollution Prevention Coordinator, Langley Air Force Base
Kimberly L. Coble, Virginia Senior Scientist, Chesapeake Bay Foundation
Larry Coffey, Engineering Manager, Virginia Metalcrafters
Professor W. David Conn, Associate Director, University Center for Environmental & Hazardous Materials Studies, Virginia Tech
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James E. Hudgins, President, C.R. Hudgins Plating
John Hudson, Manufacturing Specialist, A.L. Philpott Manufacturing Center
Tedd Jett, Manager, Environmental Engineering, Merck & Company
Hugh D. Keogh, President, Virginia Chamber of Commerce
James C. McKean, Manager, Industrial Services, Department of Business Assistance
Robert W. Rogers, Vice President, Operations, Richmond Newspapers, Inc.
Joan Salvati, Environmental Coordinator, Chesterfield County
Sallie Sebrell, Garden Club of Huntingdon
Gordon W. Shelton, Vice Mayor City of Fredericksburg
Cathy Taylor, Pollution Prevention Manager, Reynolds Metals Company
Carol C. Wampler, Vice President & General Counsel, Virginia Manufacturers Association
David Weiss, Industry Director, Environmental Technology & Energy, Center for Innovative Technology
Jon L. Woltmann, Associate Counsel, Union Camp Fine Paper Division
James Woody, President, Ecosafe, Inc.